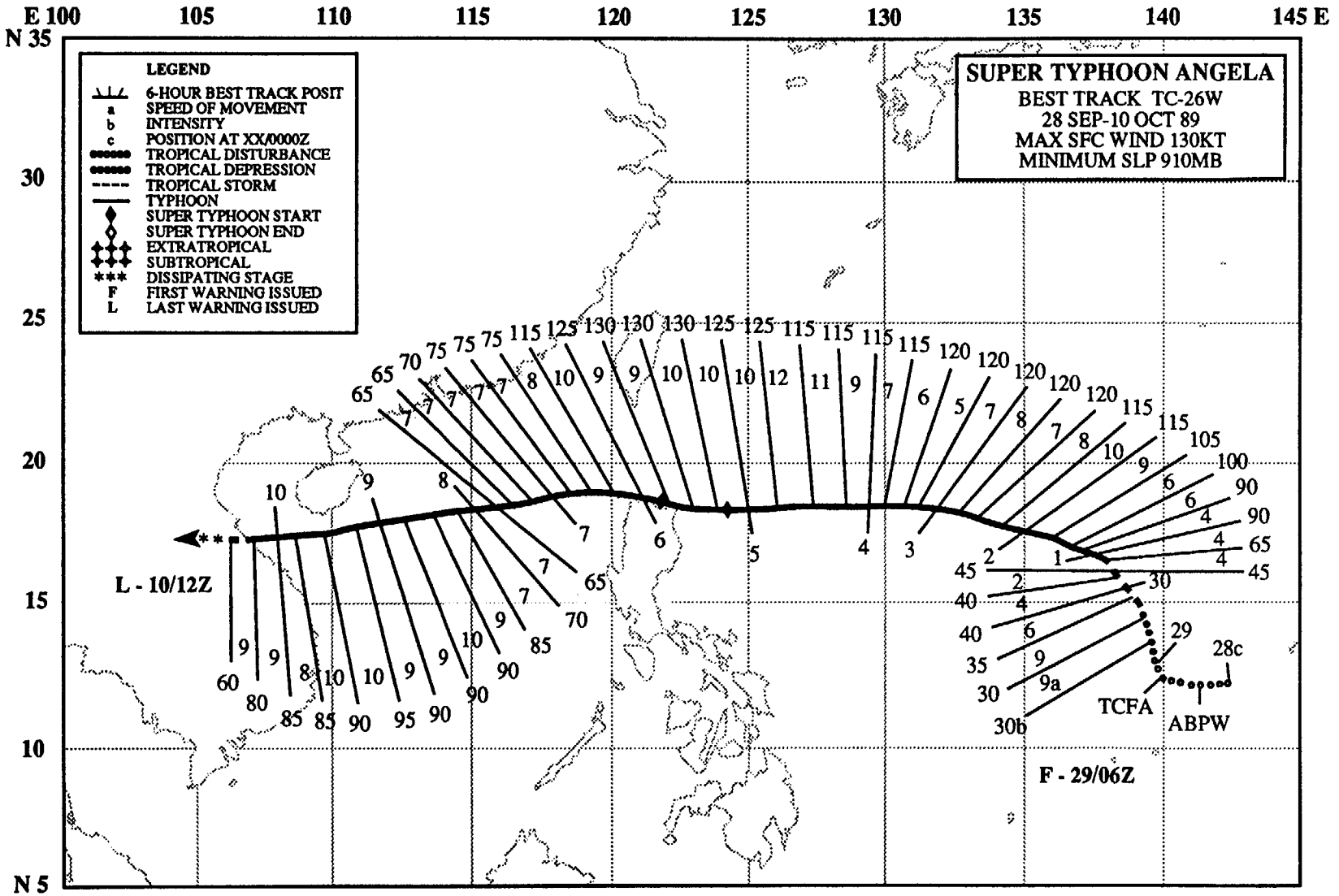
E 100
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LEGEND
6-HOUR BEST TRACK POSIT
a SPEED OF MOVEMENT
b INTENSITY
c POSITION AT XX/0000Z
TROPICAL DISTURBANCE
TROPICAL DEPRESSION
TROPICAL STORM
TYPHOON
SUPER TYPHOON START
SUPER TYPHOON END
EXTRATROPICAL
SUBTROPICAL
*** DISSIPATING STAGE
F FIRST WARNING ISSUED
L LAST WARNING ISSUED
SUPER TYPHOON ANGELA
BEST TRACK TC-26W
28 SEP-10 OCT 89
MAX SFC WIND 130KT
MINIMUM SLP 910MB
L - 10/12Z
TCFA
ABPW
F - 29/06Z

SUPER TYPHOON ANGELA (26W)

Angela was the first of three tropical cyclones to form in the monsoon trough during the three-day period 29 September to 2 October. It had the unique distinction of being in warning status longer than any other tropical cyclone in the western North Pacific this year — 12 days. From 29 September to 10 October, JTWC issued a total of 46 warnings on Angela. Angela also was one of five tropical cyclones to reach super typhoon intensity in 1989. Developing south of Guam, Angela tracked slowly westward and struck northern Luzon with super typhoon intensity causing a large number of casualties and wide spread destruction. It then continued into the South China Sea, where it reintensified, finally making landfall in central Vietnam.

During late September, the monsoon trough, located near 10° north latitude, became very active after a week of little convective activity. On 26 September an area of convection developed in the western Caroline Islands. The disturbed weather persisted for two more days, and was added as a suspect area to the 280600Z Significant Tropical Weather Advisory. As the disturbance moved to the southeast side of a Tropical Upper Tropospheric Trough (TUTT) cyclone, it organized rapidly. This resulted in the issuance of a Tropical Cyclone Formation Alert at 281730Z. The enhanced upper-level outflow from the TUTT low aided further development, and the first warning on Tropical Depression 34W (Figure 3-26-1) was issued at 290600Z.

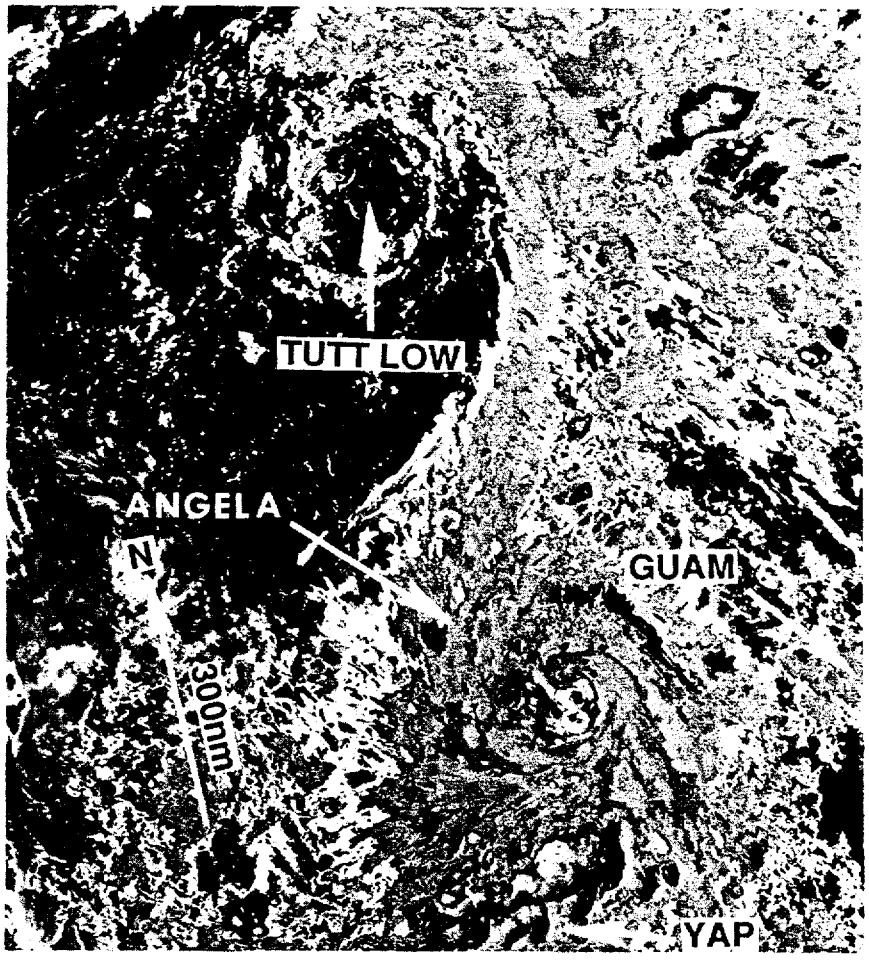

Figure 3-26-1. Angela just after the initial warning was issued. The TUTT low northwest of Angela is enhancing upper-level outflow and divergence (290904Z September DMSP enhanced infrared imagery).

The depression was upgraded to Tropical Storm Angela at 291800Z. Angela initially tracked northwestward, as it developed, influenced by a mid-latitude short wave to the northwest. At 010600Z, the short wave had moved to the east, and Angela started tracking westward along the south side of the subtropical ridge. In the meantime as the short wave approached, Angela developed dual outflow channels and rapid intensification occurred. Angela intensified from 45 kt (23 m/sec) to 90 kt (46 m/sec) during the period 301200Z to 010000Z, reaching typhoon intensity at 301800Z. After 010000Z, intensification was slower as Angela lost the outflow channel to the north. It wasn't until four days later, at 050600Z, that Angela (Figure 3-26-2) was upgraded to a super typhoon.

Between 051500Z and 060300Z, Angela skirted along the northern coast of Luzon and was downgraded to a typhoon at

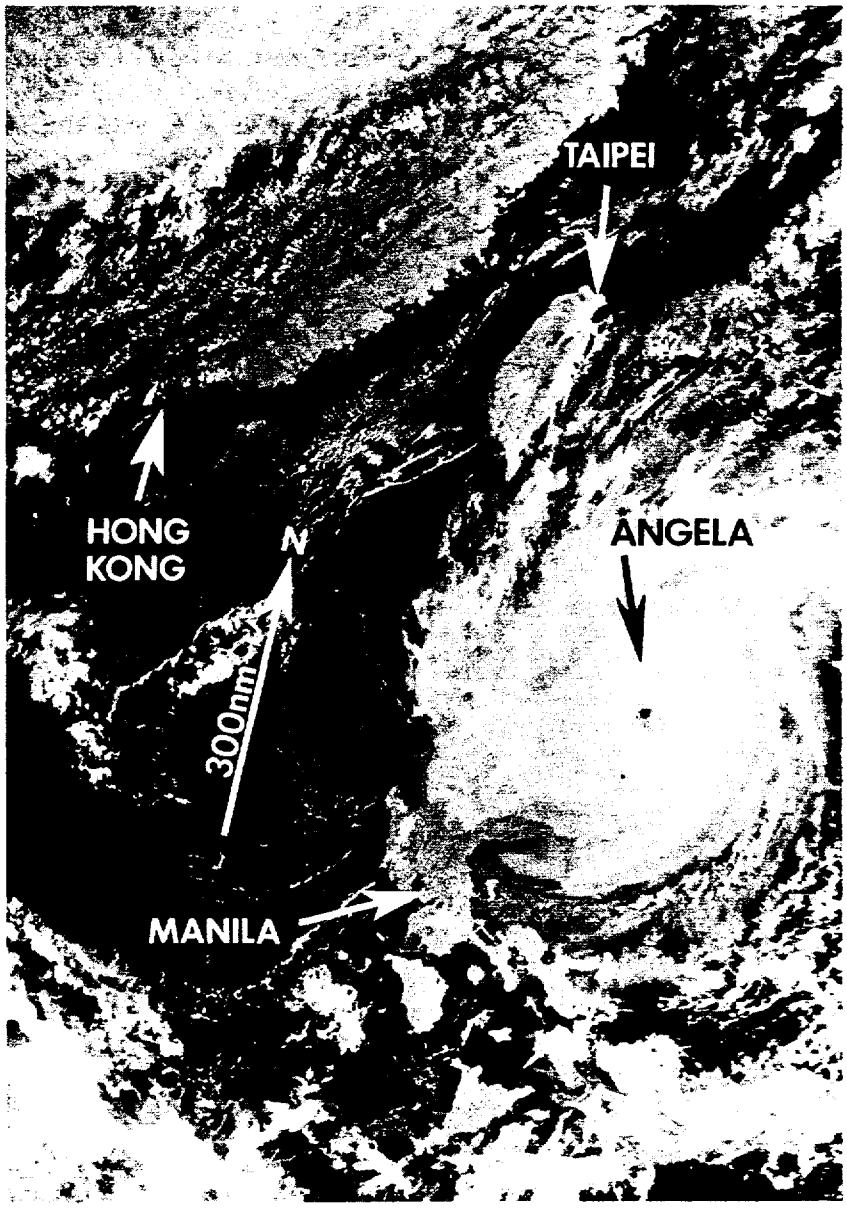

Figure 3-26-2. Super Typhoon Angela at peak intensity just prior to hitting northern Luzon (050558Z October NOAA visual imagery). Note: The spot in the eye is a blemish on the original transparency.

060600Z as it moved into the South China Sea. News reports from the Philippines indicated that the death toll from Angela was 62, mostly drowning victims, with 50 others missing and 21 injured. The high winds and heavy rains triggered flooding and caused heavy damage to crops and infrastructure. Angela destroyed more than 22,000 houses and sent 118,000 people fleeing to evacuation centers.

In the South China Sea, the typhoon started to track west-southwestward with high pressure building over China. As vertical wind shear weakened, Angela reintensified reaching 95 kt (49 m/sec) at 090600Z. Interacting with the topography of Hainan, the typhoon weakened before it moved inland in central Vietnam. At 100600Z, Angela made landfall approximately 30 nm (55 km) north of Hue, Vietnam and the last warning followed at 101200Z.